UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF ILLINOIS

EASTERN DIVISION

IN RE: AIMSTER COPYRIGHT LITIGATION	MASTER FILE NO. 01 C 8933 MDL 1425 JUDGE MARVIN E. ASPEN **DECLARATION OF VANCE IKEZOYE IN SUPPORT OF PLAINTIFFS' PROPOSED PRELIMINARY INJUNCTION ORDER**

DECLARATION OF VANCE IKEZOYE

I, Vance Ikezoye, the undersigned, declare:

1. I am the President and Chief Executive Officer of Audible Magic Corporation. I make this declaration in support of Plaintiffs' Proposed Preliminary Injunction Order in order to demonstrate that, contrary to the public statements by the defendants in this matter, there are methods presently available to prevent unauthorized recordings from being distributed on peer-to-peer systems like those operated by defendants. I have personal knowledge of the following facts and, if called and sworn as a witness, could competently testify thereto.

Ikezoye
EXHIBIT NO. 1
9.10.09
A. IGNACIO HOWARD CSR 9830

2. Audible Magic is a technology and services company that provides content management and information services to the media and entertainment industries. The company offers a range of standard information services as well as customized project development based upon its patented media identification and classification technology, its media monitoring and management software, and an extensive and continually updated reference database of copyrighted music. One of the services Audible Magic currently provides is monitoring radio broadcasts for customers such as SESAC, a major performing rights organization. Audible Magic is using its fingerprinting technology (described more fully below) to identify the songs broadcast by terrestrial radio stations, to assist in determining royalty distributions to artists. Audible Magic also utilizes its fingerprinting technology in a song copyright verification service to the CD replication industry (companies that duplicate CDs) to enable them to identify copyrighted recordings prior to reproduction. The replicators then utilize this information to ensure that the customer has authorization from the copyright holders to copy the recordings.

3. The core of Audible Magic's work is audio recognition technology that classifies sound based on its perceptual characteristics. A company called Muscle Fish, LLC, which began in 1992 and which Audible Magic acquired in July 2000, originally developed the technology. This technology relies on Mel-Filtered Cepstral Coefficients ("MFCCs"), which are measurements that accurately characterize and model audio in the same way the ear perceives sound. When a person hears any sound, the human ear perceives the spectra of the sound. (A spectrum measures amplitude as a function of frequency.) We have found that measuring the shape of the spectrum is the method of identifying uniqueness in a segment of audio that is the most accurate and robust, i.e., able to work in many different environments and despite changes in format and acoustic and digital modifications. Thus, Audible Magic's

technology analyzes the shape of the spectrum inherent in a digital audio file. The MFCC describes the shape of that spectrum, adjusted for the way that the human ear actually perceives sound.

4. The analysis performed by this technology produces a set of numeric values called a "feature vector" or "digital fingerprint," which is absolutely unique to a particular master recording. In essence, each digital fingerprint identifies a master recording, much as a human fingerprint identifies a person. The fingerprinting technology works on all forms of audio, regardless of the digital format into which the audio has been encoded.

5. The fingerprint remains constant through typical audio processing, such as the compression that occurs when an audio file is encoded into digital formats, including MP3, the most popular format. Thus, one fingerprint can be used to recognize all manipulated forms of the original audio, just as law enforcement technology permits identification of a suspect even if a fingerprint is smeared. The fingerprints are accurate enough that they can differentiate between various live and studio performances of a single song.

6. Audible Magic's technology also accurately identifies songs regardless of the bit rate of the file. The bit rate is the number of bits (small pieces of data) that occur in a given amount of time, usually a second. Thus, a bit rate is usually expressed in some multiple of bits per second - for example, kilobits, or thousands of bits per second (Kbps). The higher the bit rate, the larger the file and the better the sound quality. Users can set the bit rate at several different levels, but the identification technology will work in a range of bit rates from highly compressed 20 Kbps to CD quality, over 300 Kbps. This range includes the bit rates used by

regular users of P2P services, who generally prefer the higher quality that comes with higher bit rates, usually at least 56 Kbps and more often much higher.

7. The fingerprints are very small. Only 20 seconds of a master recording is needed to create the fingerprint. A typical reference fingerprint is around one kilobyte (1 Kb), whereas a typical file encoded in MP3, the most popular digital format for sound recordings, is about three megabytes (3Mb), 3,000 times larger than the fingerprint, and a typical WAV file (another popular digital format for sound recordings) is about 30 megabytes (30 Mb), 30,000 times larger than the fingerprint. The small size of the fingerprint makes it much easier to store and much faster to transmit and check the fingerprints of unknown audio files against a reference database of fingerprints of known recordings.

8. The fingerprint technology is very secure and cannot be tampered with. As long as the audio is not distorted to the point that the listening experience is significantly affected, the fingerprint will positively identify the recording.

9. I am familiar with peer-to-peer systems ("P2P") like the ones operated by defendants in this case. We understand the basic technology and architectures; and have discussed designs to apply Audible Magic's technology to P2P. Audible Magic's technology can be used to block unauthorized recordings from being distributed and copied in this type of system, as described below.

10. First, Audible Magic possesses a database of fingerprints from approximately 3.4 million copyrighted songs. This database roughly represents the music available for purchase in North America and consists of music from the five major and over 500 independent music

labels. Fingerprints from this large archive would be used to populate an Audible Magic Identification Server with a reference database. Then, the company's fingerprinting software would be installed either on each user's computer or on a server operated by the system operator (e.g., Aimster/Madster). In either case, the fingerprinting technology would create a fingerprint of each digital recording that a user sought to distribute and transmit it over the Internet to the reference database, located on the Audible Magic Identification Server. The unknown fingerprint is then compared to the fingerprints in the reference database.

11. What happens next depends on whether the system is designed as a "filter-in" system or a "filter-out" system. In a "filter-in" system, the reference database would include fingerprints of only those recordings that the copyright holders have authorized for distribution. In that case, if the fingerprint of the unknown audio file matches a fingerprint in the reference database, the user would be permitted to distribute and copy the audio file, but would be blocked from distributing it if there is no match. (The blocking could occur by disabling the unauthorized file on the user's hard drive.) If a "filter-out" system was desired, the reference database would include fingerprints of those recordings that are not authorized for distribution, and a match would prevent distribution, while no match would permit distribution.

12. The Audible Magic technology can easily handle millions of requests for identification against a reference database of hundreds of thousands of recordings. Audible Magic's technology currently achieves above 98% correct identification rates, with an insignificant level of false positive identifications. Our goal, which we are continually working towards, is 100% correct identification. In addition, when combined with other file

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identification methods such as MD5 hashes, a comprehensive system would make the entire verification even faster, more accurate, and less expensive.

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct and that this Declaration was executed on September 10, 2002, at Los Gatos, California.

Vance Ikezoye